

were discussed and resolved. The comments appearing herein are substantially in accordance with those which were presented and discussed during the interview.

Claims 1-2, 4-7, 10-13 and 16-25, as amended appear in this application for the Examiner's review and consideration. Claims 1, 11 and 24 have been amended to more particularly point out and distinctly claim the subject matter which Applicants regard as their invention. The claim amendments are supported by the specification and have been made to expedite prosecution of the present application. As no new matter has been added, these claim changes and additions should be entered at this time. The Examiner has stated that a new oath or declaration is required. Applicants will furnish this at a later date.

#### **Rejection of claims under 35 USC 112, second paragraph**

Claims 1-7, 11-13 and 16-25 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants respectfully traverse these rejections and submit that the rejections do not apply to the pending claims.

Claims 1, 8, 11 and 22 were rejected as being vague and indefinite by reciting the phrase "spatially-addressable array." Applicants do not agree that this term is vague and indefinite. A spatially-addressable array is an array in which individual addresses or locations (i.e., reaction vessels) are separated in space and can be accessed or addressed individually. See, for example, the specification at pages 27-29 (the Example); Figures 1 and 2; and page 46, Table 4. One of ordinary skill in the art would have no problem in understanding the phrase "spatially-addressable array" in light of the teachings of the present specification.

The phrase "structural diversity elements" was also objected to in the Office Action. Applicants do not agree that this term is vague and indefinite. Structural diversity elements refer to the common variable structural elements of a molecular construct, and comprise moieties which are attached to the molecular core or backbone. The structural diversity elements are varied to produce the compounds of the array. See, for example, the specification at page 9, lines 25-27, and pages 21-26. Furthermore, a wide variety of different structural diversity elements can be utilized in the present invention as claimed, such that use of this generic term is appropriate.

Claim 10 was rejected as being vague and indefinite by reciting "(a) providing a plurality of reaction vessels organized into the first and [second] sub-arrays . . .". This rejection is traversed. Claim 10 recites "(a) providing at least 500 reaction vessels organized

into at least first and second sub-arrays". As stated in the specification, e.g., at page 9, lines 32-35, a sub-array is a set of spatial addresses within a given array; in other words, a sub-array is a subset of an array. Although vessels (or addresses or compounds) are spatially separated from one another, they can nevertheless be grouped together in an array, and an array can include two or more subarrays. As recited in claim 10, reactants are added to each of the reaction vessels such that the compounds composing each sub-array differ from one another by at least one change in a structural diversity element. To achieve this result, different reagents are added to different reaction vessels, as described throughout the specification (see, e.g., page 15, lines 13-22; the Examples; and Tables 1- 4), and the contents of the reaction vessels are concurrently reacted in at least one and optionally multiple cycles (see, e.g., the Example). Applicants submit that one of ordinary skill in the art would understand this claim language and that this claim is not vague or indefinite.

Claims 11 and 22 were rejected as being vague and indefinite by reciting "apportioning into reaction vessels identifiable by their spatial addresses". Applicants do not agree. As the specification makes clear, a spatial address refers to the position of a vessel or compound in an array. One of ordinary skill in the art would immediately realize that the reactants can be apportioned into these vessels in order to form the compounds. Accordingly, this language cannot be vague or indefinite.

The Office Action also requested clarification of step b of claim 11; in response, the claim has been amended to clarify that it is the first and second set of *reactants* which are reacted together in each reaction vessel to form the combinatorial array of compounds. Applicants believe that this language, as amended, is clear and is not indefinite.

Claim 12 was rejected as being vague and indefinite for reciting "... formatting the contents of the reaction vessels into a spatially-addressable array." Claim 12 provides that the further formatting step can occur after step a) or step b). Applicants respectfully submit that this language is clear and unambiguous. Furthermore, the present specification, e.g., at page 28, lines 14 - 34, describes one example of formatting of an array according to the amended claims. Applicants submit that one of ordinary skill in the art would understand this claim language and that this claim is not vague or indefinite.

Claim 24 was rejected as being vague and indefinite for reciting "wherein the reagents of at least 80 reaction vessels are concurrently reacted...". Claim 24, as amended, recites that "wherein for each cycle the reagents in at least 80 different reaction vessels are concurrently reacted."; that is, that each cycle consists of the reaction of the reagents

contained in at least 80 different reaction vessels. Applicants respectfully submit that this language is clear and unambiguous

Accordingly, Applicants urge that the claims are not vague and ambiguous, and that all rejections under 35 USC 112, second paragraph should be withdrawn.

**Rejection of claims under 35 USC 103(a)**

Claims 1-7, 11-13 and 16-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pirrung et al. (J. Am. Chem. Soc. January 1995, vol. 117, pages 1240-1245)("Pirrung"). Applicants have confirmed that the Official publication date for this reference is February 1, 1995. The present invention is a continuation of U.S. application serial no. 08/375,838, filed January 20, 1995, which issued as U.S. Patent No. 5,712,171 on January 27, 1998. The present invention therefore claims priority back to January 20, 1995. Thus, the Pirrung reference is not an effective prior art reference against the present application.

Applicants note that Pirrung states that an abstract of the article was published in Advance ACS Abstracts on January 1, 1995. It is believed that the published abstract is that which appears at the beginning of the February 1, 1995 article. If so, applicants submit that the Pirrung abstract is not enabling. For example, the abstract provides no details regarding the generation of solution phase libraries as presently claimed by applicants. For these reasons, all rejections based on Pirrung have been overcome and should be withdrawn.

Claims 1-2 and 3-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,510,240 to Lam et al. ("Lam"). Claim 1, as amended, includes the recitation of claim 3 that each compound composing the array is the product of a solution phase reaction. As claim 3 was not rejected over Lam, this rejection has been rendered moot.

**Conclusion**

Applicants respectfully submit that the entire application is now in condition for allowance, early notice of which would be appreciated.

No fee is believed to be due for the claim changes of this response. Should any fees be required, please charge them to Pennie & Edmonds LLP deposit account no. 16-1150.

Respectfully submitted,

Date: March 22, 2000

*Allan A. Fanucci / by Ian Scott Reg No 44,327*  
Allan A. Fanucci 30,256  
(Reg. No.)

**PENNIE & EDMONDS LLP**  
1155 Avenue of the Americas  
New York, New York 10036-2711

(212) 790-9090